

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kie Y. Ahn et al.

Title: ATOMIC LAYER-DEPOSITED LaAlO₃ FILMS FOR GATE DIELECTRICS

Docket No.: 1303.050US2

Filed: February 27, 2004

Examiner: Unknown



Serial No.: 10/789,042

Due Date: N/A

Group Art Unit: 2812

Mail Stop Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

We are transmitting herewith the following attached items (as indicated with an "X"):

☒ A return postcard.

☒ A Supplemental Information Disclosure Statement (2 pgs.), Form 1449 (2 pgs.), and copies of 1 cited documents. Copies of US Patents/Published Applications NOT enclosed; application filed after June 30, 2003.

☒ Communication Concerning Related Applications (5 pgs.).

If not provided for in a separate paper filed herewith, Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

Customer Number 21186

By: David R. Cochran

Atty: David R. Cochran

Reg. No. 46,632

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 23 day of November, 2004.

Name

KACIA LEE

Signature

Kacia Lee

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

(GENERAL)

S/N 10/789,042

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kie Y. Ahn et al.

Examiner: Unknown

Serial No.: 10/789,042

Group Art Unit: 2812

Filed: February 27, 2004

Docket: 1303.050US2

Title: ATOMIC LAYER-DEPOSITED LAALO3 FILMS FOR GATE DIELECTRICS

COMMUNICATION CONCERNING RELATED APPLICATION(S)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicants would like to bring to the Examiner's attention the following related application(s) in the above-identified patent application:

<u>Serial/Patent No.</u>	<u>Filing Date</u>	<u>Attorney Docket</u>	<u>Title</u>
09/944981	August 30, 2001	1303.021US1	GATE OXIDES AND METHODS OF FORMING
09/945535	August 30, 2001	1303.026US1	HIGHLY RELIABLE AMORPHOUS HIGH-K GATE OXIDE ZrO2
10/052983 6767795	January 17, 2002	1303.031US1	HIGHLY RELIABLE AMORPHOUS HIGH-k GATE DIELECTRIC ZrO _x N _y
10/027315	December 20, 2001	1303.033US1	LOW-TEMPERATURE GROWN HIGH-QUALITY ULTRA-THIN PRASEODYMIUM GATE DIELECTRICS
09/797324	March 1, 2001	303.717US1	METHODS, SYSTEMS, AND APPARATUS FOR UNIFORM CHEMICAL-VAPOR DEPOSITIONS
10/081439	February 20, 2002	1303.046US1	EVAPORATED LaAlO3 FILMS FOR GATE DIELECTRICS
10/137058	May 2, 2002	303.802US1	ATOMIC LAYER DEPOSITION AND CONVERSION
10/137168	May 2, 2002	1303.048US1	METHODS FOR ATOMIC-LAYER DEPOSITION OF ALUMINUM OXIDES IN INTEGRATED CIRCUITS

10/137499	May 2, 2002	1303.050US1	ATOMIC LAYER-DEPOSITED LaAlO3 FILMS FOR GATE DIELECTRICS
10/163481	June 5, 2002	1303.056US1	ATOMIC LAYER-DEPOSITED HfAlO3 FILMS FOR GATE DIELECTRICS
10/163686	June 5, 2002	1303.059US1	A METHOD INCLUDING FORMING GATE DIELECTRICS HAVING MULTIPLE LANTHANIDE OXIDE LAYERS
10/209581	July 30, 2002	1303.061US1	ATOMIC LAYER DEPOSITED NANOLAMINATES OF HfO2/ZrO2 FILMS AS GATE DIELECTRICS
10/191336	July 8, 2002	1303.068US1	MEMORY UTILIZING OXIDE- CONDUCTOR NANOLAMINATES
10/219870	August 15, 2002	1303.069US1	LANTHANIDE DOPED TiOx DIELECTRIC FILMS BY PLASMA OXIDATION
10/219878 6790791	August 15, 2002	1303.070US1	LANTHANIDE DOPED TiOx DIELECTRIC FILMS
10/229903	August 28, 2002	1303.078US1	ATOMIC LAYER DEPOSITED HfSiON DIELECTRIC FILMS
10/233309	August 29, 2002	1303.079US1	ATOMIC LAYER DEPOSITED LANTHANIDE DOPED TiOx DIELECTRIC FILMS
10/309583	December 4, 2002	1303.082US1	ATOMIC LAYER DEPOSITED ZR-SN- TI-O FILMS USING TiH4
10/309935	December 4, 2002	1303.083US1	ATOMIC LAYER DEPOSITED Zr-Sn- Ti-O FILMS
10/379470	March 4, 2003	1303.090US1	ATOMIC LAYER DEPOSITED DIELECTRIC LAYERS
10/403734	March 31, 2003	1303.092US1	ATOMIC LAYER DEPOSITED ZrAlxOy DIELECTRIC LAYERS

COMMUNICATION CONCERNING RELATED APPLICATIONS

Serial Number: 10/789,042

Filing Date: February 27, 2004

Title: ATOMIC LAYER-DEPOSITED LAALO3 FILMS FOR GATE DIELECTRICS

Page 3

Dkt: 1303.050US2

10/420307	April 22, 2003	1303.097US1	ATOMIC LAYER DEPOSITED ZrTiO4 FILMS
10/602323	June 24, 2003	1303.101US1	LANTHANIDE OXIDE / HAFNIUM OXIDE DIELECTRIC LAYERS
10/602315	June 24, 2003	1303.107US1	LANTHANIDE OXIDE / HAFNIUM OXIDE DIELECTRICS
09/779959	February 9, 2001		
09/838335	April 20, 2001		
09/881408	June 13, 2001		
09/908767	July 18, 2001		
10/765619	January 27, 2004	1303.033US2	LOW-TEMPERATURE GROWN HIGH- QUALITY ULTRA-THIN PRASEODYMIUM GATE DIELECTRICS
10/768597	January 30, 2004	1303.033US3	LOW-TEMPERATURE GROWN HIGH- QUALITY ULTRA-THIN PRASEODYMIUM GATE DIELECTRICS
10/789044	February 27, 2004	1303.070US2	LANTHANIDE DOPED TiOx DIELECTRIC FILMS
10/863953	June 9, 2004	1303.031US2	HIGHLY RELIABLE AMORPHOUS HIGH-k GATE DIELECTRIC ZrOxNy
10/929272	August 30, 2004	303.802US2	ATOMIC LAYER DEPOSITION AND CONVERSION
10/930138	August 31, 2004	1303.044US2	EVAPORATION OF Y-Si-O FILMS FOR MEDIUM-k DIELECTRICS
10/930184	August 31, 2004	1303.021US2	CRYSTALLINE OR AMORPHOUS MEDIUM-K GATE OXIDES, Y2O3 AND GD2O3

COMMUNICATION CONCERNING RELATED APPLICATIONS

Serial Number: 10/789,042

Filing Date: February 27, 2004

Title: ATOMIC LAYER-DEPOSITED LAALO3 FILMS FOR GATE DIELECTRICS

Page 4

Dkt: 1303.050US2

10/930516	August 31, 2004	1303.078US2	ATOMIC LAYER DEPOSITED HfSiON DIELECTRIC FILMS
10/931341	August 31, 2004	1303.082US2	ATOMIC LAYER DEPOSITED ZR-SN- TI-O FILMS USING TiH4
10/930431	August 31, 2004	1303.056US2	ATOMIC LAYER-DEPOSITED HfAlO3 FILMS FOR GATE DIELECTRICS
10/931365	August 31, 2004	1303.059US2	Pr2O3-BASED La-oxide GATE DIELECTRICS
10/931364	August 31, 2004	1303.069US2	LANTHANIDE DOPED TiOx DIELECTRIC FILMS BY PLASMA OXIDATION
10/931343	August 31, 2004	1303.101US2	LANTHANIDE OXIDE / HAFNIUM OXIDE DIELECTRIC LAYERS
10/931340	August 31, 2004	1303.107US2	LANTHANIDE OXIDE / HAFNIUM OXIDE DIELECTRICS
10/931845	August 31, 2004	303.717US2	METHODS, SYSTEMS, AND APPARATUS FOR UNIFORM CHEMICAL-VAPOR DEPOSITIONS
10/931595	August 31, 2004	303.717US3	METHODS, SYSTEMS, AND APPARATUS FOR UNIFORM CHEMICAL-VAPOR DEPOSITIONS
10/931356	August 31, 2004	1303.026US2	HIGHLY RELIABLE AMORPHOUS HIGH-K GATE OXIDE ZrO2

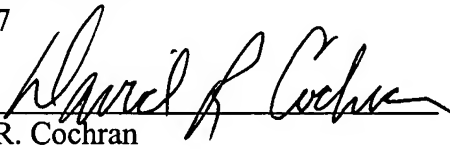
Respectfully submitted,

KIE Y. AHN ET AL.

By Applicants' Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 371-2157

Date 22 November 2004 By


David R. Cochran
Reg. No. 46,632

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 23 day of November, 2004.

Name KACIA LEE

Kacia Lee
Signature

S/N 10/789,042



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Kie Y. Ahn et al.	Examiner:	Unknown
Serial No.:	10/789,042	Group Art Unit:	2812
Filed:	February 27, 2004	Docket:	1303.050US2
Title:	ATOMIC LAYER-DEPOSITED LaAlO ₃ FILMS FOR GATE DIELECTRICS		

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Supplemental Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Supplemental Information Disclosure Statement considered.

The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this communication.

The present application is either a U.S. national patent application filed after June 30, 2003 or an international application that entered the national stage under 35 U.S.C. § 371 after June 30, 2003. Thus, Applicant believes that the U.S. Patent & Trademark Office has waived the requirement under 37 C.F.R. 1.98 (a)(2)(i) for submitting a copy of each cited U.S. patent and each U.S. patent application publication. The waiver is provided in a pre-OG notice from the U.S. Patent & Trademark Office entitled "Information Disclosure Statements May Be Filed Without Copies of U.S. Patents and Published Applications in Patent Applications filed after June 30, 2003" and dated July 11, 2003. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).


Respectfully submitted,

KIE Y. AHN ET AL.

By their Representatives,

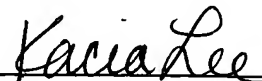
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 371-2157

Date 22 November 2004

By 
David R. Cochran
Reg. No. 46,632

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 23 day of November, 2004.

Name KACIA LEE


Signature

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)



Complete if Known

Application Number	10/789,042
Filing Date	February 27, 2004
First Named Inventor	Ahn, Kie
Group Art Unit	2812
Examiner Name	Unknown

Sheet 1 of 2

Attorney Docket No: 1303.050US2

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Filing Date If Appropriate
	US-2002/00001971-A1	01/03/2002	Cho, Hag-ju	06/27/2001
	US-2002/0111001	08/15/2002	Ahn, Kie Y., et al.	02/09/2001
	US-2002/0122885	09/05/2002	Ahn, Kie Y.	03/01/2001
	US-2002/0195056	12/26/2002	Sandhu, G., et al.	12/26/2002
	US-2003/0003722	01/02/2003	Vaartstra, Brian A.	08/19/2002
	US-2003/0157764	08/21/2003	Ahn, Kie Y., et al.	02/20/2002
	US-2003/0209324-A1	11/13/2003	Fink, S. T.	03/31/2003
	US-2003/0227033	12/11/2003	Ahn, Kie Y., et al.	06/05/2002
	US-2003/0228747	12/11/2003	Ahn, Kie Y., et al.	06/05/2002
	US-2004/0004245	01/08/2004	Forbes, Leonard, et al.	07/08/2002
	US-2004/0004247	01/08/2004	Forbes, Leonard, et al.	07/08/2002
	US-2004/0033681	02/19/2004	Ahn, Kie Y., et al.	08/15/2002
	US-2004/0033701-A1	02/19/2004	Ahn, K. Y., et al.	08/15/2002
	US-2004/0038525-A1	02/26/2004	Meng, S., et al.	08/26/2002
	US-4,058,430	11/15/1977	Suntola, T., et al.	11/25/1975
	US-4,725,877	02/16/1988	Brasen, Daniel, et al.	04/11/1986
	US-6,010,969	01/04/2000	Vaarstra, Brian A.	10/02/1996
	US-6,203,726	03/20/2001	Danielson, Earl, et al.	10/07/1999
	US-6,225,237	05/01/2001	Vaartstra, Brian A.	09/01/1998
	US-6,238,976	05/29/2001	Noble, Wendell P., et al.	02/27/1998
	US-6,273,951	08/14/2001	Vaartstra, Brian A.	06/16/1999
	US-6,368,398	04/09/2002	Vaartstra, Brian A.	01/19/2001
	US-6,451,641	09/17/2002	Halliyal, Arvind, et al.	02/27/2002
	US-6,495,436	12/17/2002	Ahn, Kie Y., et al.	02/09/2001
	US-6,527,866	03/04/2003	Matijasevic, Vladimir, et al.	02/09/2000
	US-6,531,354	03/11/2003	Maria, J., et al.	01/17/2001
	US-6,537,613	03/25/2003	Senzaki, Y., et al.	04/10/2000
	US-6,586,349	07/01/2003	Jeon, J. S., et al.	02/21/2002
	US-6,645,882	11/11/2003	Halliyal, Arvind, et al.	01/17/2002
	US-6,660,660	12/09/2003	Haukka, S. P., et al.	08/31/2001
	US-6,713,846	03/30/2004	Senzaki, Y.	01/25/2002
	US-6,730,575	05/04/2004	Eldridge, Jerome M.	08/30/2001
	US-6,750,066	06/15/2004	Cheung, F. T., et al.	04/08/2002

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	T ²
--------------------	---------------------	------------------	---	----------------

EXAMINER

DATE CONSIDERED

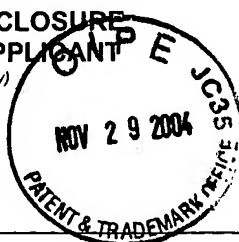
Substitute Disclosure Statement Form (PTO-1449)

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Complete if Known

Application Number	10/789,042
Filing Date	February 27, 2004
First Named Inventor	Ahn, Kie
Group Art Unit	2812
Examiner Name	Unknown

Sheet 2 of 2

Attorney Docket No: 1303.050US2

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		TAKEMOTO, J. H., et al., "Microstrip Resonators and Filters Using High-TC Superconducting Thin Films on LaAlO ₃ ", <u>IEEE Transaction on Magnetics</u> , 27(2), (March 1991), 2549-2552	

EXAMINER**DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.¹ Applicant's unique citation designation number (optional) ² Applicant is to place a check mark here if English language Translation is attached